I Claim:

1. A replacement cutting-head for a microkeratome, wherein an original cutting-head was designed for use with a multi-beveled cutting-blade assembly having a known shear-face angle and a blade-edge point, the replacement cutting-head comprising:

a cutting-blade assembly having a single-bevel cutting edge;

a cutting-head including a slot allowing the cutting-blade assembly to be oscillated as the cutting-head is moved across a patient's eye; and

wherein the single-bevel blade assembly is oriented within the cutting-head, such that a shear-face angle and blade-edge point are each approximately the same as those for the multi-beveled cutting-blade assembly.

2. The cutting-head of claim 1, wherein the single-bevel cutting-blade has a shear-face angle of about 35° and a blade-edge point about equal to a desired corneal flap thickness.

3. A cutting-head for a microkeratome comprising:

a cutting-head including a slot for holding a single-bevel cutting-blade assembly, such that the cutting-blade assembly is oscillated as the cutting-head is moved across a patient's eye; and

wherein the slot is oriented, such that the single-bevel cutting-blade assembly will be positioned to have a shear-face angle and a blade-edge point to provide a known corneal flap thickness without compressing the corneal flap.

4. The cutting-head of claim 3, wherein the single-bevel cutting-blade has a shear-face angle of about 35° and a blade-edge point about equal to a desired corneal flap thickness.

5. A replacement cutting-head for a microkeratome, wherein an original cutting-head was designed for use with a multi-beveled cutting-blade assembly having a known shear-face angle and a blade-edge point, the replacement cutting-head comprising:

a cutting-head including a slot for holding a single-bevel cutting-blade assembly, such that the cutting-blade assembly may be oscillated as the cutting-head is moved across a patient's eye; and

wherein the slot is oriented, such that the single-bevel cutting-blade assembly will be positioned to have a shear-face angle and a blade-edge point each approximately the same as those for the multi-beveled cutting-blade assembly.

6. The cutting-head of claim 5, wherein the single-bevel cutting-blade has a shear-face angle of about 35° and a blade-edge point about equal to a desired corneal flap thickness.